

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A flame-hydrolytically produced titanium dioxide powder present in aggregates of primary particles, ~~characterised in that~~ wherein

- ~~[[it]]~~ the titanium dioxide powder has a BET surface of 20 to 200 m<sup>2</sup>/g and
- the half width HW, in nanometers, of the primary particle distribution has values between  
$$HW \text{ [nm]} = a \text{ [H]} \times BET^f \text{ where } a = \cancel{670 \times 10^{-9}} \text{ } \underline{670 \times 10^{-9}} \text{ m}^3/\text{g and}$$
$$[-1.3 \leq f \leq -1.0 \text{ and}] \text{ } \underline{-1.3 \leq f \leq -1.0}$$
- the proportion of ~~particles~~ aggregates with a diameter of more than 45 μm is in a range from 0.0001 to 0.05 wt.%.

Claim 2 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 1, wherein the BET surface is in a range from 40 to 60 m<sup>2</sup>/g.

Claim 3 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 2, wherein the 90% spread of the number distribution of the primary particle diameters lies in a range from 5 to 100 nm.

Claim 4 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 2, wherein the equivalent circular diameter of the aggregates (ECD) is less than 80 nm.

Claim 5 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 2, wherein the mean aggregate area is less than 6500 nm<sup>2</sup>.

Claim 6 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 2, wherein the mean aggregate circumference is less than 450 nm.

Claim 7 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 1, wherein the BET surface lies in a range from 80 to 120 m<sup>2</sup>/g.

Claim 8 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 7, wherein the 90% spread of the number distribution of the primary particles diameters has values from 4 to 25 nm.

Claim 9 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 7, wherein the equivalent circular diameter of the aggregates (ECD) is less than 70 nm.

Claim 10 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 7, wherein the mean aggregate area is less than 6000 nm<sup>2</sup>.

Claim 11 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 7, wherein the mean aggregate circumference is less than 400 nm.

Claim 12 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 1, wherein the proportion of aggregates and/or agglomerates with a diameter of more than 45 μm lies in a range from 0.001 to 0.01 wt.%.

Claim 13 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 1, wherein for a given BET surface it has an anatase/rutile ratio of 2:98 to 98:2.

Claim 14 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 1, wherein it has a chloride content of less than 0.1 wt.%.

Claim 15 (Previously Presented): The flame-hydrolytically produced titanium dioxide powder according to claim 1, wherein the compacted bulk density has values of 20 to 200 g/l.

Claim 16 (Withdrawn): A process for the production of the flame-hydrolytically produced titanium dioxide powder according to claim 1, wherein

- a titanium halide, preferably titanium tetrachloride, is vapourised at temperatures of less than 200°C, the vapours are transferred to a mixing chamber by means of a carrier gas with a proportion of steam in a range from 1 to 25 g/m<sup>3</sup>, and
- separately from this, hydrogen, primary air, which may optionally be enriched with oxygen and/or pre-heated, and steam are transferred to the mixing chamber,
- wherein the proportion of steam is in a range from 1 to 25 g/m<sup>3</sup> primary air,
- the lambda value lies in the range from 1 to 9 and the gamma value lies in the range from 1 to 9,

following which

- the mixture consisting of the titanium halide vapour, hydrogen, air and steam is ignited in a burner and the flame burns back into a reaction chamber sealed from the ambient air, wherein
  - a vacuum of 1 to 200 mbar exists in the reaction chamber,
  - the exit velocity of the reaction mixture from the mixing chamber to the reaction space lies in a range from 10 to 80 m/sec,
- in addition secondary air is introduced into the reaction chamber, wherein
  - the ratio of primary air to secondary air is between 10 and 0.5,
- following which the solid is separated from the gaseous substances, and
- the solid is then treated with steam.

Claim 17 (Previously Presented): The process according to claim 16, wherein the steam is introduced together with the air into the mixing chamber.

Claim 18 (Previously Presented): A flame-hydrolytically produced titanium dioxide powder according to claim 1 for the heat protection stabilisation of silicones.

Claim 19 (Withdrawn): Sunscreen agents comprising a flame-hydrolytically produced titanium dioxide powder according to claim 1.

Claim 20 (Withdrawn): A catalyst, a catalyst carrier, a photocatalyst, and an abrasive for the production of dispersions comprising a flame-hydrolytically produced titanium dioxide powder according to claim 1.